

**Dr. Kay Bidle – Microbiology:
Virus & Phytoplankton Interactions Glossary**

TERM	DEFINITION
Autotroph	Organism capable of synthesizing its own food from inorganic substances, using light or chemical energy.
Autotrophic Bacteria	Bacteria make their own food, either through photosynthesis (which uses sunlight, carbon dioxide and water to make food) or by chemosynthesis (which uses carbon dioxide, water and/or compounds like ammonia to make food).
Bacteria	A large group of unicellular microorganisms that have cell walls but lack organelles and an organized nucleus, including some that can cause disease.
Bacterial Decomposition	An important part of nutrient cycling. Bacteria can decompose organisms as big as whales and as small as other microbes. This provides nutrients for other organisms.
Carbon Cycle	Biogeochemical cycle by which carbon is exchanged among earth's atmosphere, biosphere, hydrosphere, and lithosphere.
Cellular Respiration	Refers to the biochemical pathway by which cells release energy from the chemical bonds of food molecules and provides that energy for the essential processes of life.
Chloroplasts	Organelles found in plant cells and eukaryotic algae that conduct photosynthesis.
Coccolithophore	A unicellular eukaryotic phytoplankton. They are almost exclusively marine and are found in large numbers throughout the sunlight zone of the ocean.
Coccolithovirus	A giant double-stranded DNA virus that infects <i>Emiliana huxleyi</i> , the most abundant species of coccolithophore.
Deoxyribonucleic Acid (DNA)	The genetic material (the components of genes), which encode the blueprints that direct and control the development and functioning of all known living organisms (except RNA viruses).

Food Web	A series of organisms related by predator-prey and consumer-resource interactions; the entirety of interrelated food chains in an ecological community.
Glycosphingolipids	A subtype of glycolipids, lipids with a carbohydrate attached that provide energy and serve as markers of cellular recognition, which contain the amino alcohol sphingosine.
Microbial Loop	The trophic pathway in the marine microbial food web where dissolved organic matter (DOM) is returned to higher trophic levels via the incorporation into bacterial biomass.
Molecular Biology	The branch of biology that deals with the nature of biological phenomena at the molecular level through the study of DNA and RNA, proteins, and other macromolecules involved in genetic information and cell function, characteristically making use of advanced tools and techniques of separation, manipulation, imaging, and analysis.
Molecular Ecology	A field of evolutionary biology that is concerned with molecular population genetics, molecular phylogenetic.
Molecular Evolution	A change in the sequence composition of cellular molecules such as DNA, RNA, and proteins over long periods of time.
Photosynthesis	A process used by plants and certain bacteria to convert light energy, normally from the sun, into chemical energy that can be used to fuel organisms' activities.
Phytoplankton	Considered photosynthesizing microscopic organisms meaning they are able to make food from the energy of sunlight, making them primary producers in the marine food web which inhabit the upper sunlit layer of almost all oceans and bodies of fresh water.
Ribonucleic Acid (RNA)	A nucleic acid containing the genetic instructions used in the synthesis of proteins, all known living organisms, and the genetic information of some viruses. Different than DNA in the sense that it is only a single stranded molecule and contains ribose sugar instead of deoxyribose.
Virology	The study of viruses, complexes of nucleic acids and proteins that have the capacity for replication in animal, plant, and bacterial cells.
Virus	A small infectious agent that replicates only inside the living cells of other organisms, from animals and plants to bacteria and archaea.